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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
08/962,040	10/31/1997	JOHN M. CARNEY		8385

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EXAMINER	
JONES, DWAYNE C	

ART UNIT	PAPER NUMBER
1614	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	08/962,040	CARNEY ET AL.	
	Examiner	Art Unit	
	Dwayne C Jones	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-29,32-52* is/are pending in the application.

4a) Of the above claim(s) *17-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28,29 and 32-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1. Claims 17-29, and 32-52 are pending.

2. Claims 17-27 are non-elected and withdrawn from consideration.

3. Claims 28, 29, and 32-52 are rejected.

Response to Arguments

4. Applicants' arguments filed November 7, 2003 have been fully considered but they are not persuasive. Applicants present the ensuing arguments. First, applicant argues that Wood et al. do not teach or suggest the treatment of a patient suffering from a dysfunction or disease condition arising from oxidative damage to the skin with a spin trapping compound and its use is allegedly based on hindsight analysis. Second, applicants allege that the prior art reference of Proctor et al. is nonanalogous art since Proctor et al. is directed to hair growth stimulation. Third, applicants purport that Maillard and Finkelstein references do not teach of the instant invention. Fourth, applicants argue that the scope of enablement rejection based on 35 U.S.C. 112, first paragraph is unfounded.

5. First, applicant argues that Wood et al. do not teach or suggest the treatment of a patient suffering from a dysfunction or disease condition arising from oxidative damage to the skin with a spin trapping compound and its use is allegedly based on hindsight analysis. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that

any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Wood et al. specifically teach that determining the ability of mammalian cells to resist the internalization of free radicals, such as the oxygen-derived free radicals generated by the action of ultraviolet light on the skin, (see column 1, lines 30-34). In addition, Wood et al. teach that oxygen radicals are known to cause a number of disruptive processes at the cellular level, such as lipid peroxidation, cleavage of DNA, cell mortality, and alterations of enzyme activity. Clearly, Wood et al. do provide the skilled artisan with the general knowledge and motivation to use spin labeled compounds, such as the spin-labeled quaternary ammonium salts of formula I, (see column 3 and 4) to combat the effects of UV radiation.

6. Second, applicants allege that the prior art reference of Proctor et al. is nonanalogous art since Proctor et al. is directed to hair growth stimulation. In response to applicant's argument that the prior art reference of Proctor et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Proctor et al. do teach the skilled artisan of topically applying to the

skin a composition that contains various types of free radical scavengers. In fact, Proctor et al. teach of pharmaceutically utilizing the compound of N-tert-Butyl-alpha-phenyl nitrone, (see pages 3-5). This teaching of Proctor et al. has a nitrone species that is topically applied to the skin, as in the instant application. The skilled artisan is clearly motivated to use spin-labeled compounds, such as those used in Proctor et al., for topical treatment of the skin to offset the damaging effects of UV radiation to mammalian cells. Furthermore, applicant recites the word "comprising", which is open-claim language. It is held that "the word 'comprising' incorporates additional steps of procedures and does not exclude materials or processes not recited in the claim". *Gould v. Mossinghoff, Comr. Pats.*, (DCCD 1982) 215 USPQ 310.

7. Third, applicants purport that Maillard and Finkelstein references do not teach of the instant invention. Both of the prior art references of Maillard and Finkelstein were included to show applicant that nitrone compounds are known in the art. In particular, . Finkelstein et al. teach of the spin trapping of superoxide by the nitrone of 5-5-dimethyl-1-pryrroline N-oxide, (see abstract). Maillard et al. teach of using various spin-trapping compounds, such as 5-5'-dimethylpyrroline-N-oxide (DMPO), phenyl-N-tert-butylnitrone, and alpha-4-pyridyl-1-oxide-N-tert-butylnitrone. For these reasons, it would have been obvious to the skilled artisan to utilize various types of compounds to act as scavengers of free radicals in order to deter the detrimental effects caused by free radicals to cell and body as disclosed by Woods et al. Moreover, Proctor et al. teach of the pharmaceutical administration of various types of free radical scavenger compounds. In

fact, Proctor et al. teach of pharmaceutically utilizing the compound of N-tert-Butyl-alpha-phenyl nitrone, (see pages 3-5).

8. Fourth, applicants argue that the scope of enablement rejection based on 35 U.S.C. 112, first paragraph is unfounded. However, the instant specification is enabled *for treating* the skin due to ionizing radiation, burns, wounds, and ulcer treatment and healing and aging *does not reasonably provide enablement for the prevention or prophylaxis of* dysfunctions or diseases that arise from oxidative damage to the skin that result from other than ionizing radiation, burns, wounds, and ulcer treatment and healing and aging is maintained. In addition, the instant specification does not provide an enabling disclosure of the prophylaxis of damage due to the skin from various events, such as ionizing radiation, burns, wounds, and ulcer treatment and healing and aging. Accordingly, this rejection is maintained for both these reasons as well as those of record.

Claim Rejections - 35 USC § 101

9. The rejection of claim 28, 29 32-35 and 39-51 under 35 U.S.C. 101 because the claimed invention is not supported by either a credible asserted utility or a well-established utility is withdrawn in response to the amendment and remarks of November 7, 2003.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. The rejection of claims 28, 29, 32-35 and 39-51 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling *for treating* the skin due to ionizing radiation, burns, wounds, and ulcer treatment and healing and aging *does not reasonably provide enablement for the prevention of* dysfunctions or diseases that arise from oxidative damage to the skin that result from other than ionizing radiation, burns, wounds, and ulcer treatment and healing and aging is maintained. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims, see the Office Action of May 7, 2003 for the rationale.

12. Claims 28, 29, and 32-52 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

13. *Regents of the University of California v. Eli Lilly & Co.., 119 F.3d 1559, 1568 (Fed. Cir. 1997), cert. denied, 523 U.S. 1089, 118 S.Ct. 1548 (1980),* holds that an adequate written description requires a precise definition, such as by structure, formula, chemical name, or physical properties, "not a mere wish or plan for obtaining the claimed chemical invention." *Eli Lilly, 119 F.3d at 1566.* The Federal Circuit has adopted the standard set forth in the Patent and Trademark Office ("PTO") Guidelines

for *Examination of Patent Applications Under the 35 U.S.C. 112, 1 "Written Description" Requirement ("Guidelines"), 66 Fed. Reg. 1099 (Jan. 5, 2001)*, which state that the written description requirement can be met by "showing that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics, "including, inter alia, "functional characteristics when coupled with a known or disclosed correlation between function and structure...." *Enzo Biochem, Inc. v. Gen-Probe., 296 F.3d, 316, 1324-25 (Fed. Cir. 2002)* (quoting Guidelines, 66 Fed. Reg. At 1106 (emphasis added)). Moreover, although *Eli Lilly* and *Enzo* were decided within the factual context of DNA sequences, this does not preclude extending the reasoning of those cases to chemical structures in general. *Univ. of Rochester v. G.D. Searle & Co., 249 F. Supp.2d 216, 225 (W.D.N.Y 2003).*

14. The instant claims are drawn to a method of treating "a dysfunction or disease condition arising from oxidative damage to the skin" by the administration of a spin trapping compound. The claimed methods of treatment fail to meet the requirement for an adequate written description of the claimed invention as required by 35 USC 112, 1st paragraph. There is insufficient descriptive support for the phrase "a dysfunction or disease condition arising from oxidative damage to the skin." Furthermore, the claimed methods require treatment of an unspecified disease or dysfunction and no evidence indicates that a treatable disease was known to applicant, other than burns and damage due to exposure to ionizing radiation, wounds, and ulcers. In the absence of some understanding of the conditions to be treated one of skilled in the art would not have concluded that Applicant was in possession of the claimed methods.

Claim Rejections - 35 USC § 103

15. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

16. The rejection of claims 28, 29 32-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wood et al. of U.S. Patent No. 4,849,346 in view of Proctor et al. of 327,263 and Finkelstein et al. and Maillard et al. is maintained and repeated. Wood et al. teach that oxygen radicals are known to cause a number of disruptive processes at the cellular level, such as lipid peroxidation, cleavage of DNA, cell mortality, and alterations of enzyme activity. Wood et al. teach that these oxygen radicals can be generated by a number of physical or biological processes, such as enzymatically, photochemically, or radiochemically, (see column 1, lines 11-28). In fact, the invention of Wood et al. is directed to determining the ability of mammalian cells to resist the internalization of free radicals, such as the oxygen-derived free radicals generated by the action of ultraviolet light on the skin, (see column 1, lines 30-34). Wood et al. disclose that mammalian cells are contacted with a spin labeled compound, namely the spin-labeled quaternary ammonium salts of formula I, (see column 3 and 4). Wood et al. do not teach of the pharmaceutical administration of these nitroxide and spin labeled-compounds. However, Wood et al. teach the skilled artisan of the use of a spin-labeling compound to remove oxygen free radicals. It would have been obvious to the skilled artisan to utilize various types of spin-labeling compounds so long as these spin-labeling compounds were pharmaceutically acceptable.

17. The prior art reference of Proctor et al. does teach of the topical administration of various types of free radical scavengers. In fact, Proctor et al. teach of pharmaceutically utilizing the compound of N-tert-Butyl-alpha-phenyl nitrone, (see pages 3-5). When the teaching of Wood et al. are combined with those of Proctor et al., the skilled artisan is provided with the motivation to therapeutically administer compounds that are known to act as free radical scavengers. For these reasons, it would have been obvious to utilize various types of compounds to act as scavengers of free radicals in order to deter the detrimental effects caused by free radicals to cell and body. Accordingly, Finkelstein et al. teach of the spin trapping of superoxide by the nitrone of 5-5-dimethyl-1-pryrroline N-oxide, (see abstract). Maillard et al. teach of using various spin-trapping compounds, such as 5-5'-dimethylpyrroline-N-oxide (DMPO), phenyl-N-tert-butylnitrone, and alpha-4-pyridyl-1-oxide-N-tert-butylnitrone. Because the prior art, for instance Proctor et al., has shown of the topical use of compounds which are known to act as free radical scavengers, the skilled artisan would have been motivated to pharmaceutically utilize compounds that are known to act as free radical scavengers in order to offset the detrimental effects caused by their generation from physical or biological processes, such as enzymatic, photochemical or radiochemical processes as disclosed by Wood et al. The determination of a dosage having the optimum therapeutic index is well within the level of one having ordinary skill in the art, and the artisan would have been motivated to determine optimum amounts to get the maximum effect of the drug.

Obviousness-type Double Patenting

18. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

19. Claims 28, 29 32-52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims1-36 of U.S. Patent No. 5,622,994. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant invention and U.S. Patent No. 5,622,994 are directed to the treatment of dysfunctions and disease conditions arising from oxidative damage due to the administration of a cancer therapeutic agent with the administration of spin trapping compounds. In fact, U.S. Patent No. 5,622,994 teach that the disorder may be due to the administration of bleomycin because it generates oxygen free radicals and produces cutaneous toxicities. Moreover, it is well understood and known in the art that ionizing radiation, namely X-ray, UV, gamma or beta, is used to therapeutically treat cancer in patients. Accordingly, it would have been obvious to the skilled artisan to utilize these spin trapping compounds, nitrones, to offset

the oxidative damage due to the administration of chemotherapeutic agents, like bleomycin, as well as the therapeutic use of ionizing radiation.

20. Claims 28, 29 32-52 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 7-20 of U.S. Patent No. 6,403,627. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the instant invention and U.S. Patent No. 6,403,627 are directed to the treatment of dysfunctions and disease conditions arising from oxidative damage with the administration of spin trapping agents. In fact, U.S. Patent No. 6,403,627 teach that the disorder can be ulcers, bed sores, burns as well as exposure to radiation, namely X-ray, UV, gamma or beta.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. C. Jones whose telephone number is (571) 272-0578. The examiner can normally be reached on Mondays, Tuesdays, Thursday, and Fridays from 8:30 am to 6:00 pm. The official fax No. for correspondence is (703) 872-9306.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marianne Seidel, may be reached at (571) 272-0584.

DWAYNE JONES
PRIMARY EXAMINER
Tech. Ctr. 1614
March 8, 2004